

JULY 12, 2004

## HEALTH UPDATE

### **Pertussis Cases in North Dakota**

Since June 22, 2004, 57 laboratory-confirmed and 18 epidemiologically-linked cases of pertussis have been identified in North Dakota. Forty-nine of the cases are in adults; 26 cases are in children 18 years and younger. Further investigation is underway to identify other cases.

Most of the cases identified have been from the Ward County area. However, the North Dakota Department of Health (NDDoH) has received reports of people presenting to providers with pertussis-like symptoms in other parts of the state. Adults, teens and vaccinated children often have mild symptoms that mimic bronchitis or asthma. Therefore, the NDDoH recommends providers consider testing for pertussis when evaluating any patient with an acute cough illness characterized by one or more of the following symptoms:

- Prolonged cough
- Cough with paroxysms
- Whoop
- Post-tussive gagging/vomiting

**The NDDoH recommends that people presenting with the above symptoms be considered as presumptive pertussis and should be treated.**

Testing for pertussis should include a specimen for both culture and polymerase chain reaction (PCR). Pertussis testing kits are available at most major medical centers and public health units in North Dakota and from the Division of Microbiology of the NDDoH.

**All persons identified as contacts to confirmed pertussis cases should be treated.** The NDDoH will refer contacts to their primary care provider for evaluation and treatment. Symptomatic contacts should be tested. The NDDoH will not charge for the testing of symptomatic contacts.

Symptomatic contacts should be prescribed antibiotics and advised to exclude themselves from all activities (e.g., daycare, work, school) until medication has been taken for five days.

**Antibiotics should be prescribed even if laboratory results are pending.** Guidelines for treatment of pertussis and a pertussis fact sheet are attached.

The NDDoH recommends that providers consider pertussis for all pregnant women with prolonged cough. Mothers infected with pertussis can pass the disease on to their newborn child. Pertussis can be an extremely serious disease in infants, especially newborns. Newborns with pertussis can develop severe pneumonia and apnea; most pertussis-related deaths in the United States occur in newborns.

Immunization records of children younger than 7 years of age should be reviewed and DTaP vaccine administered as needed. The NDDoH also is recommending implementing a primary DTaP vaccination series be accelerated for children in all parts of North Dakota. The

accelerated schedule for DTaP includes immunizing children at 6, 10 and 14 weeks of age rather than at 2, 4 and 6 months of age. **Pediarix® should not be used for the accelerated schedule.** For children that have started the DTaP series, they are eligible for the next dose 4 weeks after the previous dose. Children who are at least 4 years of age and who have not received their fifth dose also are recommended to be vaccinated.

In addition, immunization records of children younger than 7 years of age should be reviewed and DTaP vaccine administered as needed. Children who have completed the primary series of DTaP vaccine should be given a booster dose if their last dose was given more than three years prior.

Children and daycare providers that are in a child care environment should refrain from daycare if symptomatic. They are considered contagious until they have taken antibiotics for at least 5 days. Children and providers in daycare that are exposed to a confirmed pertussis case within the daycare should be placed on chemoprophylaxis regardless of immunization status.

*Pertussis Treatment and Chemoprophylaxis Recommendations* and a fact sheet are attached.

Please contact the NDDoH Immunization Program at 701.328.3386 or toll-free at 800.472.2180 with any questions or concerns regarding this issue.

# PERTUSSIS

## ***Questions and Answers***

### **What is pertussis?**

Pertussis, also called “whooping cough,” is a very contagious disease caused by bacteria (germs). Pertussis is usually mild in older children and adults, but it often causes serious problems in very young children (i.e., infants less than one year of age).

### **What are the symptoms of pertussis?**

Pertussis symptoms have two stages. The first stage (which lasts 1 to 2 weeks) begins like a cold, with a runny nose, sneezing, mild fever, and cough that slowly gets worse. The second stage is marked by uncontrolled coughing spells and a whooping noise (in young children) when the person inhales. During severe coughing spells, a person may vomit or become blue in the face from lack of air. Between coughing spells, the person often appears to be well. The coughing spells may be so bad that it is hard for babies to eat, drink, or breath. This coughing stage may last for 6 or more weeks. Adults, teens, and vaccinated children often have milder symptoms that mimic bronchitis or asthma. Some infants may only have apnea (failure to breath), and/or cyanosis.

## **How is pertussis spread?**

The germs that cause pertussis live in the nose, mouth and throat, and are sprayed into the air when an infected person sneezes, coughs or talks. Other people nearby can then inhale the germs. Touching a tissue or sharing a cup used by someone with pertussis can also spread the disease. The first symptoms usually appear about 7 to 10 days after a person is exposed. Infants often get pertussis from older children or adults. Pertussis is contagious from the onset of cold symptoms until three weeks after cough onset.

## **Who gets pertussis?**

Pertussis is most common among infants less than a year old, but anyone can get it. Pertussis can be hard to diagnose in very young infants, teens and adults because their symptoms often look like a cold with a nagging cough. Adults and teenagers are often carriers of the disease.

## **Is pertussis dangerous?**

It can be, especially for infants. Pertussis can cause breathing problems (apnea), pneumonia, and swelling of the brain (encephalopathy), which can lead to seizures and brain damage. Pertussis can also cause death (rarely), especially in very young infants.

## **How is pertussis diagnosed?**

A doctor may think a patient has pertussis because of the symptoms, but a sample of mucus must be taken from the back of the nose for testing. The sample is then tested by a laboratory to determine whether the patient has pertussis.

## **How is pertussis treated?**

Antibiotics can make the disease milder if they are started early enough, and will help to prevent transmission of the illness to others. Those treated with antibiotics are contagious until five days of treatment are completed. Anyone who is exposed to pertussis should also be given antibiotics to prevent the disease, even if they were vaccinated. In addition, it is helpful to get plenty of rest and fluids. Treatment for young children may include supportive therapy such as fluids, oxygen, and mild sedation to help the child during the prolonged period of coughing.

## **How long should people who have pertussis be excluded from activities?**

People with pertussis should be excluded from activities until five days of antibiotic treatment have been completed. People with pertussis who do not take antibiotics should be excluded until 21 days after cough onset. Symptomatic contacts of pertussis cases should also be excluded from activities until five days of antibiotic treatment are complete.

## **Can pertussis be prevented?**

Yes, there is a vaccine to prevent pertussis. It is given along with diphtheria and tetanus vaccines in the same shot (called DTaP). Five doses of vaccine, given in a series starting at 2 months of age, are needed to protect a child from pertussis. The vaccine works for most children, but it wears off after a number of years. The vaccine is not given to persons 7 years of age or older.

North Dakota state law requires all children attending early childhood facilities or schools to be vaccinated against pertussis.

## **Pertussis Treatment and Chemoprophylaxis** **Recommendations**

<b>Antibiotic</b>	<b>Dosage</b>		<b>Duration (days)</b>
	<b>Children*</b>	<b>Adults**</b>	
Erythromycin (E-mycin®, Eryc®, EryTab®)	40-50 mg/kg/day PO, in 4 divided doses (Max 2 g/day)	250-500 mg PO, in 4 doses (Max 2 g/day)	14
Azithromycin** (Zithromax®)	10-12 mg/kg/day PO, in 1 dose (Max 600 mg/day)	500 mg PO, in 1 dose (Max 600 mg/day)	5
Clarithromycin (Biaxin®)	15-20 mg/kg/day PO in 2 divided doses (Max 1 g/day for 7 days)	500 mg/day PO, in 2 divided doses (Max 1 g/day for 7 days)	7
<b>Alternatives for patients/contacts who cannot tolerate erythromycin.</b>			
Trimethoprim- Sulfamethoxazole (Bactrim™, Septra®)	8 mg TMP/40 mg SMX/kg/day PO in 2 divided doses	320 mg TMP/1600 mg SMX PO, in 2 divided doses	14
Azithromycin (Zithromax®)	10-12 mg/kg/day PO, in 1 dose (Max 600 mg/day)	500 mg PO, in 1 dose (Max 600 mg/day)	5
Clarithromycin (Biaxin®)	15-20 mg/kg/day PO in 2 divided doses (Max 1 g/day for 7 days)	500 mg/day PO, in 2 divided doses (Max 1 g/day for 7 days)	7

**SMX** = sulfamethoxazole, should not be given to pregnant women near term, nursing mothers, or infants < 2 months of age

**TMP** = trimethoprim, should not be given to pregnant women near term, nursing mothers, or infants < 2 months of age

\* Based on: American Academy of Pediatrics. Pertussis. In: Pickering LK, ed. *Red Book: 2003 Report of Committee on Infectious Disease*. 26<sup>th</sup> ed. Elk Grove Village, IL: American Academy of Pediatrics; 2003: 474-475.

\*\* Per package insert and conversation with CDC; for Azithromycin, **Z-pak** is an alternative.

\*\*\* Per conversation with CDC, the following treatment regimen using Azithromycin for children may be considered: Azithromycin 10 mg/kg (Max 500 mg/day) by mouth on the first day of treatment and 5 mg/kg (MAX 250 mg/day) once daily on the second to fifth days of treatment.

(Langley, JM, et al. Azithromycin Is as Effective as and Better Tolerated Than Erythromycin Estolate for the Treatment of Pertussis. *PEDIATRICS*, (114 No. 1), July 2004: e96-e101.

**Contact the North Dakota Department of Health Immunization Program at 800.472.2180  
for more information regarding pertussis.**

*Categories of Health Alert messages:*

- *Health Alert conveys the highest level of importance; warrants immediate action or attention.*
- *Health Advisory provides important information for a specific incident or situation; may not require immediate action.*
- *Health Update provides updated information regarding an incident or situation; no immediate action necessary.*
- *Health Information provides general information that is not necessarily considered to be of an emergent nature.*

This message is being sent to local public health units, clinics, hospitals, physicians, tribal health, North Dakota Nurses Association, North Dakota Long Term Care Association, North Dakota Healthcare Association, North Dakota Medical Association, and hospital public information officers.